AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for redirecting external memory allocation operations, generated during calls by an application to external library functions, to an internal memory manager within the application, comprising:

encountering a call to an external library function that performs a memory allocation operation during execution of the application;

determining if the external library function can call to an internal memory allocation function within the application that allocates memory from a pool that is managed by the application; and

if so,

redirecting the call to the internal memory allocation function, and

allocating the memory using the internal memory allocation function so that memory can be allocated from the pool that is managed by the application.

2. (Currently amended) The method of claim 1, wherein the task of determining if the external library function can call an internal memory allocation function involves reading a pre-determined indicator value, which indicates whether the external library function can call the internal memory allocation function.

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1   3. (Currently amended) The method of claim 2, further comprising pre-

2 determining a value for the pre-determined indicator value by examining the

3 external library function to determine whether the external library function or a

4 function called by the external library function will call a memory allocation

5 function, and whether there are external-problematic references to external

6 memory blocks allocated by the external library function.

1   4. (Original) The method of claim 1, wherein the application is a platform-

2 independent virtual machine.

1   5. (Original) The method of claim 1, wherein the application runs in

2 single-threaded mode on a computing device.

1   6. (Original) The method of claim 1, wherein the application runs on a

2 memory-constrained computing device.

1   7. (Original) The method of claim 1, wherein redirecting the call to the

2 internal memory allocation function involves executing an interpose function that

3 calls the internal memory allocation function.

1   8. (Currently amended) The method of claim 1, further comprising

2 periodically garbage collecting the memory allocated by the internal memory

3 allocation function.

1   9. (Original) The method of claim 1, wherein the internal memory

2 allocation function allocates memory in a heap.

1   10. (Currently amended) A computer-readable storage medium storing

2   instructions that when executed by a computer cause the computer to perform a

3   method for redirecting external memory allocation operations, generated during

4   calls by an application to external library functions, to an internal memory

5   manager within the application, the method comprising:

6   encountering a call to an external library function that performs a memory

7   allocation operation during execution of the application;

8   determining if the external library function can call to an internal memory

9   allocation function within the application that allocates memory from a pool that

10 is managed by the application; and

11   if so,

12   redirecting the call to the internal memory allocation

13   function, and

14   allocating the memory using the internal memory allocation

15   function so that memory can be allocated from the pool that is

16   managed by the application.

1   11. (Currently amended) The computer-readable storage medium of claim

2   10, wherein the task of determining if the external library function can call an

3   internal memory allocation function involves reading a pre-determined indicator

4   value, which indicates whether the external library function can call the internal

5   memory allocation function.

1   12. (Currently amended) The computer-readable storage medium of claim

2   11, wherein the method further comprises pre-determining a value for the pre-

3   determined indicator value by examining the external library function to

4   determine whether the external library function or a function called by the external

5   library function will call a memory allocation function, and whether there are

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6 | external problematic references between external memory blocks allocated by the

7 external library function.

1   13. (Original) The computer-readable storage medium of claim 10,

2 wherein the application is a platform-independent virtual machine.

1   14. (Original) The computer-readable storage medium of claim 10,

2 wherein the application runs in single-threaded mode on a computing device.

1   15. (Original) The computer-readable storage medium of claim 10,

2 wherein the application runs on a memory-constrained computing device.

1   16. (Original) The computer-readable storage medium of claim 10,

2 wherein redirecting the call to the internal memory allocation function involves

3 executing an interpose function that calls the internal memory allocation

4 functions.

1   17. (Currently amended) The computer-readable storage medium of claim

2 | 10, wherein the method further comprises periodically garbage collecting the

3 memory allocated by the internal memory allocation function.

1   18. (Original) The computer-readable storage medium of claim 10,

2 wherein the internal memory allocation function allocates memory in a heap.

1   19. (Currently amended) An apparatus for redirecting external memory

2 allocation operations, generated during calls by an application to external library

3 functions, to an internal memory manager within the application, comprising:

4   an execution mechanism configured to execute a call to an external library

5   function that performs a memory allocation operation during execution of the

6   application;

7   a determination mechanism configured to determine if the external library

8   function can call to an internal memory allocation function within the application

9   that allocates memory from a pool that is managed by the application; and

10   a redirection mechanism configured to redirect the call to the internal

11   memory allocation function; and

12   an internal memory allocation function configured to allocate memory so

13   that memory can be allocated from the pool that is managed by the application.

1   20. (Original) The apparatus of claim 19, wherein the determination

2   mechanism is further configured to read a pre-determined indicator value, which

3   indicates whether the external library function can call the internal memory

4   allocation function.

1   21. (Currently amended) The apparatus of claim 20, further comprising a

2   precomputation mechanism configured to precompute the pre-determined

3   indicator value by examining the external library function to determine whether

4   the external library function or a function called by the external library function

5   will call a memory allocation function, and whether there are external problematic

6   references to external memory blocks allocated by the external library function.

1   22. (Original) The apparatus of claim 19, wherein the application is a

2   platform-independent virtual machine.

1   23. (Original) The apparatus of claim 19, wherein the application runs in

2   single-threaded mode on a computing device.

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1   24. (Original) The apparatus of claim 19, wherein the application runs on a

2   memory-constrained computing device.

1   25. (Original) The apparatus of claim 19, wherein the redirection

2   mechanism is further configured to execute an interpose function that calls the

3   internal memory allocation functions.

1   26. (Currently amended) The apparatus of claim 19, further comprising a

2   garbage collection mechanism configured to ~~periodically~~ garbage collect ~~the~~

3   memory allocated by the internal memory allocation function.

1   27. (Original) The apparatus of claim 19, wherein the internal memory

2   allocation function allocates memory in a heap.